REMARKS

This amendment responds to the Office Action dated November 20, 2002 in which the Examiner objected to the disclosure and rejected claims 1-20 under 35 U.S.C. § 103.

Claims 1, 2 and 3 and new claims 22-24 claim a planographic printing plate, comprising in the following order on a support body a first layer or intermediate layer and a second layer or image forming layer. Thus, by forming the first layer or intermediate layer on the surface of the supporting body and forming the second layer or image forming layer thereon, as claimed in claims 1-3 and new claims 22-24, the claimed invention provides a planographic printing plate which is capable of directly performing platemaking by recording from a digital data source. The prior art does not show, teach or suggest the invention as claimed in claims 1-3 and new claims 22-24.

As indicated above, minor informalities in the disclosure have been corrected. It is respectfully requested that the Examiner approves the corrections and withdraws the objection to the disclosure.

Claims 1-3, 5-11, 13-18 and 20 were rejected under 35 U.S.C. § 103 as being unpatentable over *Zhong et al.* (U.S. Patent No. 5,948,596) in view of *Shiba et al.* (U.S. Patent No. 4,299,912).

Applicant respectfully traverses the Examiner's rejection of the claims under 35 U.S.C. § 103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, it is respectfully requested that the Examiner withdraws the rejection to the claims and allows the claims to issue.

Zhong et al. appears to disclose lithographic printing plates for wet and waterless offset lithographic printing which can be imagewise exposed using a digitally controlled infrared laser. (col. 1, lines 7-10) The substrate or support for the printing plate of this invention may be any of those supports or substrates that are commonly used as supports in the manufacture of lithographic printing plates. (col. 3, lines 48-51) The foregoing substrates are converted to photochemically presensitized (PS) lithographic plates by coating the plates with a material to form a photosensitive layer which is sensitive to actinic radiation at contact speed. (col. 3, lines 63-66) As used herein, the photosensitive layer which changes solubility in a developer liquid upon exposure to actinic radiation is meant to include both positive-working and negative-working photosensitive layers in the lithographic printing plates of this invention as illustrated in FIGS. 1 and 2 respectively. (col. 4, lines 22-27) The masking layer is the outermost layer of the radiation sensitive plate structure. The thermally sensitive masking layer is opaque to the actinic radiation which activates the photosensitive layer, and is soluble or dispersible in an aqueous medium. (col. 5, lines 12-16) A lithographic printing plate for use in printing operations with a fountain solution may be produced by the method of this invention using a computer controlled digitally modulated laser beam to directly image the plate. The method of this invention comprises: A) providing a radiation sensitive plate comprising in the order given: (1) a substrate; (2) a photosensitive layer which changes solubility in a developer liquid upon exposure to actinic radiation; (3) a thermally sensitive masking layer which is opaque to the actinic radiation and is soluble or dispersible in an aqueous medium, wherein the thermally sensitive masking layer comprises: (i) a disperse phase comprising a heat softenable component which is

insoluble in the aqueous medium; (ii) a continuous phase comprising a polymeric binder which is soluble or swellable in the aqueous medium; and (iii) a colorant which strongly absorbs radiant energy and converts the radiant energy to heat; B) image-wise exposing the masking layer to a beam of a radiant energy having an intensity, by directing the beam at sequential areas of the masking layer and modulating the intensity of the beam so that image areas of the masking layer which are exposed to a high intensity of the radiant energy are insolubilized in the aqueous medium whereby a sequence of soluble mask areas and insoluble mask areas are formed; C) developing the masking layer by removing the soluble mask areas of the mask layer from the photosensitive layer by treatment with the aqueous medium to form an opaque image mask on the photosensitive layer; D) uniformly exposing to actinic radiation, areas of the photosensitive layer not covered by the opaque image mask, to effect a solubility change in the developer liquid to form complimentary soluble areas and insoluble areas in the photosensitive layer; E) developing the photosensitive layer by treatment with the developer liquid to remove the soluble areas from the photosensitive layer to form the lithographic printing plate; and optionally, F) removing the opaque image mask from the photosensitive layer. (col. 6, line 44 through col. 7, line 21)

Thus, *Zhong et al.* merely discloses a photographic printing plate containing a substrate, a photosensitive layer formed on the substrate and a thermally sensitive masking layer formed on the photosensitive layer. Thus, nothing in *Zhong et al.* shows, teaches or suggests a first layer or intermediate layer formed on a supporting body and a second layer or image forming layer, which forms a covalent bond by action of light and heat, formed thereon as claimed in claims 1-3 and new claims 22-24. Rather, *Zhong et al.* merely

discloses that the thermally sensitive masking layer is formed on a photosensitive layer which is formed on a substrate.

Additionally, *Zhong et al.* discloses that the lithographic printing plate is formed after the overlying mask areas are removed. However, since the second layer of the claimed invention forms a covalent bond by action of one of light and heat and is thus the image forming layer, the second layer is not removed in claims 1-3 and new claims 22-24.

Shiba et al. appears to disclose the use of a gelatino-silver halide light-sensitive emulsion layer 30 in which one or more lipophilic resins are dispersed produces strong adhesion between the gelatino-silver halide light-sensitive emulsion layer 30 and the non-silver light-sensitive emulsion layer 20. The light-sensitive lithographic printing plate is firstly imagewise exposed to light to form a latent image in the silver halide in the gelatino-silver halide light-sensitive emulsion layer. The latent image is then developed (First Development). Immediately after First Development (or after processing with a fixer), the non-silver light sensitive layer is exposed to the light which is active to the non-silver light-sensitive layer, e.g., UV light. Then washing-out processing is conducted to remove the total gelatino-silver halide light-sensitive emulsion layer. Thereafter, Second Development is carried out wherein either exposed or unexposed areas of the non-silver light-sensitive layer is dissolved and removed to expose the hydrophilic surface of the support 10, whereby the lithographic printing plate is obtained. (col. 10, lines 16-31)

Thus, *Shiba et al.* similarly discloses forming the non-silver light-sensitive layer 20 on a support 10 and forming the gelatino-silver halide light-sensitive emulsion layer 30 thereon. Thus, *Shiba et al.* is similar to *Zhong et al.* since the gelatino-silver halide light-

emulsion layer is analogous to the masking layer of *Zhong et al.* while the non-silver light-sensitive layer is analogous to the photosensitive layer of *Zhong et al.* Thus, nothing in *Shiba et al.* shows, teaches or suggests a first layer or intermediate layer formed on a supporting body and a second layer or image forming layer, which forms a covalent bond by action of one of light and heat, formed therein as claimed in claims 1-3 and new claims 22-24. Rather, *Shiba et al.* teaches away from the claimed invention as discloses an image forming layer formed on a support with a masking layer formed thereon.

Additionally, *Shiba et al.* clearly discloses that after the non-silver light-sensitive layer is exposed to light, the gelatino-silver halide light-sensitive emulsion layer is totally removed, similar to *Zhong et al.* However, the second layer or image forming layer claimed in claims 1-3 and new claims 22-24 is not removed.

Since nothing in *Zhong et al.* or *Shiba et al.* show, teach or suggest the invention as claimed in claims 1-3, and new claims 22-24, it is respectfully requested that the Examiner withdraws the rejection to claims 1-3 and allows new claims 22-24.

Claims 5-11, 13-18 and 20 depend from claims 1-3 and recite additional features. It is respectfully submitted that claims 5-11, 13-18 and 20 would not have been obvious within the meaning of 35 U.S.C. § 103 over *Zhong et al.* and *Shiba et al.* at least for the reasons as set forth above. Therefore, it is respectfully requested that the Examiner withdraws the rejection to claims 5-11, 13-18 and 20 under 35 U.S.C. § 103.

Claims 1, 2, 4, 5, 7-10, 12, 13, 15-17 and 19 were rejected under 35 U.S.C. § 103 as being unpatentable over *Zhong et al.* in view of *Akiyama et al.* (U.S. Patent No. 5,464,724).

The Applicant respectfully traverses the Examiner's rejection of the claims under 35 U.S.C. § 103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, it is respectfully requested that the Examiner withdraws the rejection to the claims and allows the claims to issue.

As discussed above, Zhong et al. merely discloses forming a masking layer on an image forming layer on a substrate and subsequently removing the masking layer. Thus, nothing in *Zhong et al.* shows, teaches or suggests a first layer formed on a supporting body and a second layer, which forms a covalent bond by action of one of light and heat, formed thereon as claimed in claims 1-3 and new claims 22-24.

Akiyama et al. appears to disclose a PS plate comprises an aluminum substrate having anodized layers on both sides, a photosensitive layer on one side of the substrate and a coating layer of a metal oxide obtained by hydrolyzing and polycondensing an organic or inorganic metal compound on the side of the substrate opposite to that carrying the photosensitive layer. The PS plate is processed by a method comprising the steps of imagewise exposing it to light and then developing the imagewise exposed plate with an alkali aqueous solution containing an alkali metal silicate and having a pH of not less than 12. The PS plate and the method for processing the same permit substantial reduction of the amount of a replenisher for development to be supplemented and ensure a stable processing of the plate over a long time period without accompanying formation of insolubles in a developer. The PS plates never cause adhesion and peeling off of the photosensitive layers even when they are put in stacks. Moreover, the PS plate does not suffer from a problem of

contamination of the back face due to adhesion of lipophilic substances such as a developing ink. (abstract)

Thus, *Akiyama et al.* merely discloses coating a photosensitive layer on one side of a substrate. Nothing in *Akiyama et al.* shows, teaches or suggests a first layer or intermediate layer formed on a supporting body and a second layer or image forming layer, which forms a covalent bond by action of one of light and heat, formed thereon as claimed in claims 1-2 and new claims 22-23. Rather, *Akiyama et al.* merely discloses coating a photosensitive layer on one side of a substrate.

Since neither *Zhong et al.* or *Akiyama et al.* show, teach or suggest a structure as claimed in claims 1-2 and new claims 22-23, it is respectfully requested that the Examiner withdraws the rejection to claims 1 and 2 under 35 U.S.C. § 103 and allows new claims 22-23.

Claims 4, 5, 7-10, 12, 13, 15-17 and 19 depend from claims 1 and 2 and recite additional features. It is respectfully submitted that claims 4-5, 7-10, 12-13, 15-17 and 19 would not have been obvious within the meaning of 35 U.S.C. § 103 over *Zhong et al.* and *Akiyama et al.* at least for the reasons as set forth above. Therefore, it is respectfully requested that the Examiner withdraws the rejection to claims 4-5, 7-10, 12-13, 15-17 and 19 under 35 U.S.C. § 103.

New claims 21-42 have been added and recite additional features. It is respectfully submitted that these claims are in condition for allowance.

The prior art of record, which is not relied upon, is acknowledged. The references taken singularly or in combination do not anticipate or make obvious the claimed invention.

Thus, it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, applicant respectfully petitions for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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Page 4, Paragraph Beginning at Line 26, through Page 5, Line 25

Although actions of the present invention are not clear, the first layer, containing a polymer between the supporting body and the relevant infrared ray susceptible layer, exists and functions as a thermal insulating layer, whereby heat generated by exposure of an infrared laser is not diffused into the supporting body, but efficiently used for a covalent bond formation reaction of the [first] second layer. High sensitivity is realized as well as the sensitivity to an infrared laser by providing the second layer which is an infrared ray susceptible layer and whose solubility in an alkaline developing liquid is lowered by exposure on the exposure surface [orthe] or the vicinity thereof. Moreover, in the present invention, in an exposure portion, an image excellent in discrimination is formed, and development stability is good since the second layer, having non-permeability to the alkaline developing liquid, functions as a protective layer for the first layer, and stability in an elapsed time is also considered to be secure. Moreover, in a non-exposure portion, an [unhardene] unhardened binder component is quickly dissolved in a developing liquid and dispersed, and further, since the first layer existing adjacent to the supporting body contains a polymer soluble in an alkaline aqueous solution, solubility in a developing liquid is good, for example, even in the case where the developing liquid or the like whose activity has been lowered is employed, the first layer is quickly dissolved without the occurrence of film residue and the like, which is considered as an excellent development property.

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Page 49, Paragraph Beginning at Line 25

For example, diazonium salt described in S.I. Schlesinger, Photogr. Sci. Eng., 18, 387 (1974), T. S. Bal et al. Polymer, 21, 423 (1980), ammonium salt described in the specification of U.S. Patent No. 4,069,055, JP-A No. 4-36504 and so forth, phosphonium salt described in the respective specifications of U.S. Patent No. 4,069,055 and U.S. Patent No. 4,069,056, iodonium salt described in the specifications of European Patent No. 104,143, U.S. Patent No. 339,049 and U.S. Patent No. 410,201, and JP-A No. 2-150848 and JP-A No. 2-296514, sulfonium salt described in the respective specifications of European Patent No. 370,693, European Patent No. 390,214, European Patent No. 233,567, European Patent No. 297,443, and European Patent No. 297,442, U.S. Patent No. 4,933,377, U.S. Patent No. 161,811, U.S. Patent No. 410,201, U.S. Patent No. 339,049, U.S. Patent No. 4,760,013, U.S. Patent No. 4,734,444, and U.S. Patent No. 2,833,827, D.E. Patent No. 2,904,626, and D.E. Patent Nos. 3,604,580, 3,604,581, selenonium salt described in J.V. Crivello et al., Macromolecules, 10 (6), 1307 (1977), J.V. Crivello et al., J. Polymer Sci., Polymer Chem. Ed., 17, 1047 (1979), onium salts such as arsonium salt and the like described in C.S. Wen et al., The, Proc. Conf. Rad. Curing ASIA, pp. 478, Tokyo, Oct (1988), organic halogen compound described in the specification of U.S. Patent No. 3,905,815, JP-B No. 46-4605, JP-A No. 48-36281, JP-A No. 55-32070, JP-No. 60-239736, JP-A No. 61-169835, JP-A No. 61-169837, JP-A No. 62-58241, JP-A No. 62-212401, JP-A No. 63-70243, JP-A No. 63-298339, organic metal /

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organic halide described in JP-A No. 2-161445, optically acid generating agent having o-nitrobenzyl type protective group described in European Patent No. 0290,750, European Patent No. 046,083, European Patent No. 156,535, European Patent No. 271,851, and European Patent No. 0,388,343, the respective specifications of U.S. Patent No. 3,901,710, and U.S. Patent No. 4,181,531, JP-A No. 60-198538, and JP-A No. 53-133022, compounds for generating sulfonic acid by performing photolysis represented by iminosulfonate and the like described in European Patent No. 0,199,672, European Patent No. 84515, European Patent No. 199,672, European Patent No. 044,115, and European Patent No. 0101,122, the specifications of U.S. Patent No. 4,618,564, U.S. Patent No. 4,371,605, and U.S. Patent No. 4,431,774, JP-A No. 64-18143, JP-A No. 2-245756, and Japanese Patent Application No. 3-140109, disulfone compound described in JP-A No. 61-166544 are capable of being listed.

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Marked-up Claims 9-15

9. (Amended) A planographic printing plate according to claim 1, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.

10. (Amended) A planographic printing plate according to claim 2, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.

11. (Amended) A planographic printing plate according to claim 3, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.

12. (Amended) A planographic printing plate according to claim 4, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is

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Marked-up Claims 9-15

limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.

13. (Amended) A planographic printing plate according to claim 5, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.

14. (Amended) A planographic printing plate according to claim 6, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.

15. (Amended) A planographic printing plate according to claim 7, wherein said second layer contains an infrared absorbing agent[, and a content amount thereof is limited for preventing ablation] with contents on the order of 1.0 or less of an optical density of

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Marked-up Claims 9-15

said second layer or contents of 10% by weight or less with respect to a total solid contents weight of the polymer compound in said second layer.